

Version with markings to show changes made to Specification

The optical reference source 121 generates a plurality of optical reference signals S_{Refn} . Each of the signals S_{Refn} is coupled to a respective photodiode in the photodiode array 126 via the reference beam fiber optic array link 123. The optical reference signals S_{Refn} are distinguished from each other by the index n . In this case, the reference signals S_{Refn} generated by the optical reference source 121 have incremental frequencies $f_{\text{Refn}} = f_c + nf_s$ relative to index n and have an incremental value substantially equal to the AOM's 107 shift frequency f_s . A constant center frequency f_c is a component of each of the reference frequencies f_{Refn} . The reference source signals S_{Refn} are combined with the demultiplexed transmission signals S_{DTn} with respect to the index n at the photodiode array 126. Each photodiode of the photodiode array 126 detects the interference between one of the optical reference signals S_{Refn} and one of the demultiplexed transmission signals S_{DTn} . Each of the photodiodes generates a corresponding radiative transmit signal S_{TXn} , which in this case is an RF transmit signal or an intermediate-frequency signal. The radiative transmit signal S_{TXn} has a differential frequency $f_d = |f_c - f_o|$. The value of the differential frequency f_d may change with respect to changes in the signal frequency f_o . In this case, the reference source 121 may comprise an array of lasers (not shown) or a Fabry-Perot laser (not shown) that outputs a plurality of modes corresponding to the frequency shifts f_s generated by the AOM 107.

REMARKS: SPECIFICATION

The requested amendment to the specification is not a matter of substance and will require very little consideration by the examiner.

A typographical omission in the specification was corrected. In particular, on page 15, line 8, of the specification, "—frequency—" was inserted between "intermediate" and "signal".

Version with markings to show changes made to the Claims 30-33

30. (Amended) A multicarrier-signal generator including:

a pulse generator capable of generating a plurality of periodic pulses [having a pulse period], the pulses having a frequency spectrum comprising a plurality of [incrementally spaced-in-frequency] carrier signals having equally spaced frequencies, [the carrier signals having a uniform frequency spacing between adjacent carrier signals that is a function of the pulse period,] and

a frequency selector coupled to the pulse generator, the frequency selector capable of selecting a plurality of the carrier signals with respect to at least one predetermined frequency band.

31. (Amended) A multicarrier-signal generator including:

a pulse generator capable of generating a plurality of periodic pulses [having a pulse period], the pulses having a frequency spectrum comprising a plurality of [incrementally spaced-in-frequency] carrier signals having equally spaced frequencies [a uniform] with a frequency spacing [between adjacent carrier signals] that is a function of the pulse period, [the pulse generator enabled to generate information-modulated pulses wherein the periodic pulses have amplitudes that are a function of the information signal, and]

a modulator coupled to the pulse generator, the modulator adapted to modulate at least one information signal onto at least one of the pulses, and

a frequency selector coupled to at least one of the modulator and the pulse generator, the frequency selector capable of selecting a plurality of the carrier signals with respect to at least one predetermined frequency band.

32. (Amended) A method of generating a multicarrier signal including:

providing for generating a plurality of information-modulated periodic pulses [having a pulse period] wherein the unmodulated pulses have a frequency spectrum comprising a plurality of [incrementally spaced-in-frequency] equally spaced carrier

signals [having a uniform frequency spacing between adjacent carrier signals that is a function of the pulse period], the information-modulated pulses having [amplitudes] at least one of a set of signal characteristics that [are] is a function of [the] at least one information signal, the set of signal characteristics including amplitude, phase, time, and frequency, and

providing for selecting a plurality of the carrier signals with respect to at least one predetermined frequency band.

33. (Amended) A method of [transmitting] generating a multicarrier signal including:

providing for generating a plurality of periodic pulses [having a pulse period] wherein the pulses have a frequency spectrum comprising a plurality of [incrementally spaced-in-frequency] carrier signals having [a uniform frequency spacing between adjacent carrier signals, the uniform frequency spacing being a function of the pulse period] equally spaced frequencies, and

providing for modulating the pulses with [an] at least one information signal, the information-modulated pulses having [amplitudes] at least one of a set of signal characteristics that [are] is a function of the information signal, the set of signal characteristics including amplitude, phase, and frequency. [and

coupling the modulated pulses into a communication channel.]

REMARKS: CLAIMS

The requested amendments to the claims are not matters of substance, and they will require very little consideration by the examiner.

Independent Claims 30 to 33 were amended to more clearly describe the claimed invention.

64 Dependent Claims (Claims 34 to 97) were added. The additional claims are supported by the disclosure.

Providing modulation of the carriers and pulses with at least one information signal, such as described in Claims 34, 35, 37, 66, 67, 69, 82, 83, and 85 is disclosed in the specification, such as on page 10, line 29 to page 11, line 2 and on page 13, lines 10-13.

Modulating the carriers with information symbols having durations of up to the pulse period, such as described in Claims 36, 52, 68, and 84 is described in the specification, such as on page 23, lines 19-27.

Providing coding to the carrier, such as described in Claims 38, 54, 70, and 86, is disclosed in the specification, such as on page 21, lines 15-24.

Providing a multiple carriers and combining the carriers to produce at least one pulse waveform, such as recited in Claims 39, 55, 71, and 87, is described throughout the specification, such as with respect to FIGs. 2 and 3, and on page 20, lines 3-17.

Providing transmit carrier frequencies that are RF, intermediate frequency, or optical frequencies, as recited in Claims 40, 56, 72, and 88, is described in the specification, such as on page 15, lines 5-13.

Generating a pulse train, such as recited in Claims 41, 57, 73, and 89, is described throughout the specification, such as on page 19, lines 14-17, and described with respect to FIGs. 7A, 7B, 9B, 10B, 11B, and 12B.

Providing a frequency-domain window, such as recited in Claims 42, 43, 58, 59, 74, 75, 90, and 91, is described throughout the specification, such as on page 22, lines 3-20.

Providing the carriers with a time-domain frequency variation, such as described in Claims 44, 60, 76, and 92, is described in the specification, such as on page 25, lines 18-25, and on page 30, lines 6-10.

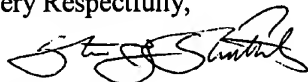
Providing for frequency division multiple access, time division multiple access, and code division multiple access such as recited in Claims 45, 61, 77, and 93, is described in the specification, such as on page 24, lines 7-10, page 25, lines 1-8, and page 21, lines 15-24.

Providing coded time offsets to the carriers, such as recited in Claims 46, 62, 78, and 94, is described in the specification, such as on page 25, lines 12-17.

Allocating a predetermined set of carrier frequencies to a particular user, as recited in Claims 47, 63, 79, and 95, is described in the specification, such as on page 25, lines 1-8.

A coupler to a communication channel, such as described in Claims 48, 49, 64, 65, 80, 81, 96, and 97, is presented as an antenna array in the specification, such as shown in FIG. 1 and described on page 9, lines 21-22.

Very Respectfully,



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